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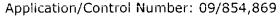
DATE MAILED: 10/10/2002

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/854,869	05/14/2001	Howard Federoff	176/60088 (6-11406-600)	9948	
75	90 10/10/2002				
Michael L. Goldman, Esq.			EXAMINER		
NIXON PEABODY LLP Clinton Square			CROUCH, DEBORAH		
P.O. Box 31051 Rochester, NY 14603-1051			ART UNIT	PAPER NUMBER	
	-		1632	2	
			DATE MAILED: 10/10/2002		

Please find below and/or attached an Office communication concerning this application or proceeding.

	<u> </u>	Application No.	Applicant(s)		
Office Action Summary		09/854,869	FEDEROFF, HOWARD		
		Examiner	Art Unit		
		Deborah Crouch	1632		
Period fo	The MAILING DATE of this communication app or Reply	ears on the cover shee	t with the correspondence address		
THE N - Exter after - If the - If NO - Falu - Any n	ORTENED STATUTORY PERIOD FOR REPLY MAILING DATE OF THIS COMMUNICATION. Insions of time may be available under the provisions of 37 CFR 1 13 SIX (6) MONTHS from the mailing date of this communication period for reply specified above is less than thirty (30) days, a reply period for reply is specified above the maximum statutory period were to reply within the set or extended period for reply will by statute eply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1 194(b)	86(a) In no event, however, ma within the statutory minimum of will apply and will expire SIX (6) to cause the application to becom	y a reply be timely filed thirty (30) days will be considered timely MONTHS from the mailing date of this communication. e ABANDONED (35 U.S.C. § 133)		
1)[_]	Responsive to communication(s) filed on 14 A	May 2001			
2a)[]		is action is non-final.			
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.					
Dispositi	on of Claims	,	•		
4)	Claim(s) $\underline{67-76}$ is/are pending in the application	n.			
	4a) Of the above claim(s) is/are withdraw	vn from consideration.			
5)	Claim(s) is/are allowed.				
6)[>]	Claim(s) <u>67-76</u> is/are rejected.				
7)	Claim(s) is/are objected to.				
•	Claim(s) are subject to restriction and/or	r election requirement.			
	on Papers	_			
	The specification is objected to by the Examine		ov the Evaminer		
10)[]	The drawing(s) filed on is/are: a) acception to the				
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). 11) The proposed drawing correction filed on is: a) approved b) disapproved by the Examiner.					
If approved, corrected drawings are required in reply to this Office action.					
12) The oath or declaration is objected to by the Examiner.					
, —	under 35 U.S.C. §§ 119 and 120		•		
•	Acknowledgment is made of a claim for foreign	n priority under 35 U.S	C. § 119(a)-(d) or (f).		
	☐ All b)☐ Some * c)☐ None of:				
,	1. Certified copies of the priority document	s have been received.			
	2. Certified copies of the priority document		n Application No		
٠ (3 Copies of the certified copies of the prior application from the International Bu See the attached detailed Office action for a list	reau (PCT Rule 17.2(a	1)).		
14)[] <i>A</i>	Acknowledgment is made of a claim for domesti	c priority under 35 U.S	.C. § 119(e) (to a provisional application).		
	i) The translation of the foreign language pro Acknowledgment is made of a claim for domest	* *			
Attachmen					
2) Notic	te of References Cited (PTO-892) te of Draftsperson's Patent Drawing Review (PTO-948) mation Disclosure Statement(s) (PTO-1449) Paper No(s) _	5) Notic	iew Summary (PTO-413) Paper No(s) e of Informal Patent Application (PTO-152)		





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The preliminary amendment filed May 14, 2001 has been entered. Claims 1-66 have been canceled and claims 67-76 are pending.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 67-76 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 67-76 contain or depend from claims that contain the term "transgenic human." However, support for this language cannot be found in the originally filed specification or the originally filed claims. Without such support for the term "transgenic human" there is no evidence that applicant was in possession of the presently claimed invention at the time of filing. Applicant is requested to point to page and line number for such support.

It is noted that applicant has support for the term transgenic mammal, and transgenic mouse, rat, goat, cow and pig. Given the broad category of "mammal" the skilled artisan would not have known that applicant possessed transgenic humans at the time of filing. The specification is to convey to the skilled artisan at the time of filing those elements that applicant considered to be the invention. Such elements cannot be brought forth post-filing.

The legal support for this written description is found in an analysis of relevant case law.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession



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of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116).

With the exception of transgenic mouse, rat, goat, cow and pig mentioned above, the skilled artisan cannot envision the particular species of mammals that applicant believes is encompassed by the disclosure, and therefore conception is not achieved until reduction to practice has occurred. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483.

Therefore, the only evidence of conception by applicant at the time of filing is for transgenic mouse, rat, goat, cow and pig, but not transgenic human, meets the written description provision of 35 U.S.C. §112, first paragraph.

Claims 67-76 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims are drawn to methods of activating a gene to be expressed in a recombinatorial substrate and methods of activating a recombinatorial substrate comprising providing a transgenic human carrying a DNA molecule comprising a recombinatorial substrate, said recombinatorial substrate comprising a promoter element capable of promoting transcription of genes in the recombinatorial substrate, a gene whose expression is to be controlled, said gene being positioned 3' to the promoter element to facilitate its transcription, a terminator positioned 3' to said promoter and 5' to said gene whose expression is to be controlled to prevent transcription of genes 3' to said terminator; and a first recombination site located 3' to said terminator and a second recombination site located 5' to said terminator, whereby treatment of said DNA molecule with a recombinase specific to the recombination sites removes said terminator from said DNA molecule, thereby activating the recombinatorial substrate and permitting transcription of said gene whose expression is to be controlled, wherein the transgenic human has no gene encoding a recombinase, introducing into the transgenic human, through its somatic



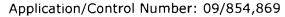
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cells, a gene encoding a recombinase and expressing said recombinase, which when expressed in the somatic cells, will promote the excision of DNA from said first recombination site to said second recombination site within the recombinatorial substrate and wherein activation of said gene whose expression is to be controlled confers a detectable and/or functional phenotype on the human when expressed in the somatic cells of the human.

The claims are not enabled as the specification does not teach methodology required for the production of transgenic humans. The art of transgenic animal production has for many years stated that the unpredictability lies with the site or sites of integration of the transgene into the target genome. Transgenic animals are regarded to have within their cells cellular mechanisms that prevent expression of the transgene, such as DNA methylation or deletion from the genome (Kappell et al (1992) Current Opinion in Biotechnology 3, 549, col. 2, parag. 2). Mullins et al (1993) in states that not all animals express a transgene sufficiently to provide a model for a disease as the integration of a transgene into difference species of animal has been reported to given divergent phenotypes (Mullins et al (1993)) Hypertension 22, page 631, col. 1, parag. 1, lines 14-17). The elements of the particular construct used to make transgenic animals are held to be critical, and that they must be designed case by case without general rules to obtain good expression of a transgene; e.g., specific promoters, presence or absence of introns, etc. (Houdebine (1994) J. Biotech. 34, page 281). "The position effect" and unidentified control elements also are recognized to cause aberrant expression (Wall (1996) Theriogenology 45, 61, parag. 2, line 9 to page 62, line 3). Mullins et al.(1996) disclose that "the use of nonmurine species for transgenesis will continue to reflect the suitability of a particular species for the specific questions being addressed, bearing in mind that a given construct may react very differently from one species to another." (Mullins et al (1996) J. Clin. Invest. 98, page S39, Summary). Well regulated transgenic expression is not frequently achieved because of poor levels or the complete absence of expression or leaky expression in non-target tissues (Cameron (1997) Molec. Biol. 7, page 256, col. 1 -2, bridg. parag.). Factors influencing low expression, or the lack their of, are not affected by copy number and such effects



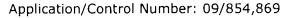


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are seen in lines of transgenic mice made with the same construct (Cameron (1997), Molec. Biol. 7, page 256, lines 3-9). These factors, thus, are copy number independent and integration site dependent, emphasizing the role the integration site plays on expression of the transgene (Cameron (1997), Molec. Biol. 7, page 256, lines 10-13). Further, Sigmund (2000) states that the random nature of transgene insertion, resulting founder mice can contain the transgene at a different chromosomal site, and that the position of the transgene effects expression, and thus the observed phenotype (Sigmund (2000) Arteroscler. Throm. Vasc. Biol. 20, page 1426, col. 1, parag. 1, lines 1-7). With regard to the importance of promoter selection, Niemann (1997) states that transgenic pigs made with different promoters regulating expression of a growth hormone gene give disparate phenotypes - one deleterious to the pig, the other compatible with pig health (Niemann (1997) Transg. Res. 7, page 73, col. 2, parag. 2, line 12 to page 73, col. 1, line 4). While, the intent is not to say that transgenic animals of a particular phenotype can never be made, the intent is to provide art taught reasoning as to why the instant claims are not enabled. Applicant has not provided any guidance as to promoters or nucleic acid constructs that would lead to a transgenic human that when the recombinatorial substrate is expressed, the substrate will confer a detectable and/or functional phenotype on the human. The lack of enablement is particularly noteworthy as to the breadth of "detectable and/or functional phenotype" as presently claimed. This includes any phenotype from a highly complex disease phenotype such as that seen in Alzheimer's disease.

The claims are free of the prior art. At the time of filing, the prior art did not teach or suggested methods of methods of activating a gene to be expressed in a recombinatorial substrate and methods of activating a recombinatorial substrate comprising providing a transgenic human carrying a DNA molecule comprising a recombinatorial substrate.

Applicant's prior patent is noted: U.S. Patent 6,252,130 B1 issued June 26, 2001.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Crouch, Ph.D. whose telephone number is 703-308-1126. The examiner can normally be reached on M-Th, 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah J. Reynolds can be reached on 703-305-4051. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Deborah Crouch, Ph.D Primary Examiner Art Unit 1632

dc September 22, 2002